



Highlights of Ferry Operators in the United States

by Kenneth Steve and Julie Parker

Ferries provide links for commuters in major metropolitan areas and offer a means of transportation across bodies of water not easily served by bridges or tunnels. Ferries are also used for emergency evacuations in times of disaster, natural or otherwise.

Moving Ahead for Progress in the 21st Century Act (MAP-21) (Public Law 112-141, section 1121(a))¹ set aside \$67 million in 2013 and 2014 for the maintenance and improvement of the Nation's ferry system. It also required the Federal Highway Administration (FHWA) to use the Bureau of Transportation Statistics' (BTS) National Census of Ferry Operators (NCFO) data to set the specific formula for allocating Federal ferry funds. This report highlights the findings of the 2010 NCFO. The current census is now being administered with a preliminary data release scheduled for the fall of 2014. Data for the current census will be finalized by winter 2014 with an updated report issued in the spring of 2015.

Ferry Passenger and Vehicle Traffic Volume

Based on data submitted by ferry operators and additional imputations, it is estimated that U.S. ferries carried nearly 103 million passengers and just over 37 million vehicles² in calendar year 2009 (table 1). The West region³ had the

highest passenger and vehicle traffic volumes (36.0 million and 15.3 million respectively). The West was followed by the Northeast (26.6 million passengers and 5.4 million vehicles) and the South with 26.3 million passengers and 9.8 million vehicles. In the Midwest there were approximately 11.4 million passenger boardings and 4.5 million vehicle boardings. U.S. territory and non-U.S. route segments made up a relatively small portion of the total passenger and vehicle boardings (2.5 million and 0.1 million, respectively).

U.S. Ferry Operations

During calendar year 2009, there were a total of 231 ferry operators⁴: 218 across 37 states, 10 in U.S. territories, and 3 between U.S. and non-U.S. locations.⁵ A breakdown of these operations by U.S. census regions can be seen in table 2. Of the 212 that indicated whether they were publicly or privately owned and operated (Appendix C), 61.3 percent were privately owned, while 33.5 percent were publicly owned (5.2 percent were both public and private).⁶ Nearly two-thirds of the operations were privately operated (63.7 percent). About one-third were publicly operated (30.2 percent), while 6.1 percent were both publicly and privately operated.

¹ <http://www.gpo.gov/fdsys/pkg/PLAW-112publ141/pdf/PLAW-112publ141.pdf>

² Passenger and vehicle estimates were based on data provided by operators and multiple imputations for missing data (see state-by-state estimates in appendix A. See explanation of estimates in methodology.).

³ A map of the U.S. census regions by state can be seen in appendix B.

⁴ The number of operators may be greater. This number represents those who responded to the census.

⁵ Non-U.S. ferry operations that served U.S. terminals are included in the NCFO.

⁶ Public operations are those that are owned and/or operated by the community that they serve. Private operations are owned and/or operated by individuals who provide a service to the community.

Table 1: Passenger and Vehicle Boarding Estimates by Census Region, 2009

Census region	Passengers	Std error ¹	Vehicles	Std error ¹
Northeast	26,628,636	295,129	5,421,907	200,466
Midwest	11,385,756	381,956	4,455,728	129,556
South	26,273,595	360,125	9,777,894	70,565
West	35,986,494	437,929	15,271,437	246,941
Other	2,548,062	154,501	138,919	32,075
Total	102,822,543	1,052,054	37,094,351	412,011

¹ Std Error: The standard error is the standard deviation of the distribution of estimates from the multiple imputations. It is a measurement of the error associated with each estimate due to imputation.

Table 2: Ferry Operators by Census Region¹, 2009

Census region	Count	Percent
Northeast	58	25.1
Midwest	37	16.0
South	79	34.2
West	44	19.0
U.S. territory	10	4.3
Non-U.S.	3	1.3
Total	231	100.0

¹ A Map of U.S. Census Regions can be seen in appendix B.

NOTE: Percentages do not add to 100 due to rounding.

Just over half of these operators indicated that their fares, at least in part, were regulated by a public agency (54.3 percent – appendix C). Slightly fewer (45.7 percent) indicated that their fares were not regulated. The majority of reporting operators' revenues come from ticket sales (table 3). This was followed by public funding revenue (22 operators reported that 75 percent or more of their revenue comes from public sources).

Table 3: Percent of Revenue From Funding Source¹, 2009

Source	Ticket sales		Public funding	
	Operators	%	Operators	%
Less than 25 percent	27	20.5	98	74.2
25 to 50 percent	11	8.3	6	4.5
50 to 75 percent	13	9.8	6	4.5
75 percent or more	81	61.4	22	16.7
Total	132	100.0	132	100.0

¹ Percentages are based on those ferry operators responding to the 2010 NCFQ. A total of 132 ferry operators provided information on revenue sources.

NOTE: Percentages do not add to 100 due to rounding.

The U.S. Ferry Fleet

In 2009 the U.S. ferry fleet comprised 652 vessels, 622 of which were in active service. California had the largest fleet (62 vessels), followed by New York (56), Massachusetts (52), Washington State (46), and New Jersey and North Carolina (44) –see appendix D. The largest concentration of ferry vessels is in the Northeast, followed by the South and West regions (table 4).

Nearly all of the vessels in the ferry fleet carry passengers (93.4 percent), while less than half (43.6 percent) carry vehicles, and less than a quarter carry freight (22.2 percent – Appendix C). The average passenger capacity of the fleet was 322 with a median capacity of 149 and maximum of 6,000 people (table 5). The average vehicle capacity of the

fleet was 39, while the maximum vehicle capacity was 202. The average operating speed of the fleet was just less than 14 mph, and the average age of the fleet was 29 years, the oldest vessel being 99 years old.

Table 4: Ferry Vessels by Census Region, 2009

Census region	Vessels	Percent	In service	Percent
Northeast	222	34.0	211	33.9
Midwest	98	15.0	93	15.0
South	155	23.8	147	23.6
West	142	21.8	138	22.2
U.S. territory	29	4.4	27	4.3
Non-U.S.	6	0.9	6	1.0
Total	652	100.0	622	100.0

NOTE: Percentages do not add to 100 due to rounding.

Table 5: Ferry Fleet Vessel Characteristics, 2009

Characteristic (operators)	Mean ¹	Median ¹	Min.	Max.
Passenger capacity (604) ²	322	149	2	6,000
Vehicle capacity (188) ²	39	18	1	202
Typical speed (590)	13.8	12.0	1.4	36.0
Vessel age (603)	29	25	3	99

¹ The mean is simply the average value. The Median represents the middle most value when all numbers are listed in order. It is a more accurate measure of the central tendency when a distribution of numbers is highly skewed.

² Does not include vessels that do not carry passengers or vehicles. Car ferries often do not track or report passenger boarding counts.

Almost all of the 652 vessels in the fleet were self-propelled (96 percent) with 22 vessels using some other form of propulsion (Appendix C). Of those vessels that were self-propelled, the majority were propelled by diesel engines (91 percent), followed by gasoline engines (3.8 percent). The fleet also contained 1 vessel powered by compressed natural gas, 2 by electricity, and 30 by some other fuel source.

The U. S. Ferry System

The U.S. ferry system consisted of 485 terminals nationwide in 2009. These terminals were spread fairly evenly across the Northeast (28.0 percent), South (27.6 percent) and West (25.4 percent) with a significant number also in the Midwest (15.1 percent—table 6). The top five states with regard to the number of existing ferry terminals were New York (44), California (41), Maine (32), Alaska (30) and Washington (37) (appendix D). For those terminals for which data was provided (467 – appendix C), more than two-thirds had parking onsite or nearby (68.1 percent), whereas one-third (33 percent) had local bus service. Additionally, 15.6 percent had intercity bus service near the terminal, while a smaller percentage had rail service nearby (local rail = 7.3 percent; intercity rail = 5.4 percent).

Table 6: Ferry Terminals by Census Region, 2009

Census region	Terminals	Percent
Northeast	136	28.0
Midwest	73	15.1
South	134	27.6
West	123	25.4
U.S. territory	12	2.5
Non-U.S.	7	1.4
Total	485	100.0

These 485 terminals were linked in various combinations to form a total of 461 route segments,⁷ where route segments are defined as the direct travel between two terminals with no intermediate stops. Nearly one-third of these route segments were in the West (28.4 percent), followed by the Northeast (26.7 percent), the South (26.3 percent), and the Midwest (15.6 percent) (table 7). The top five states with regard to the number of route segments were: California (49), New York (43), Washington State (41), Alaska (30), and Louisiana and Michigan tied (26) (appendix D).

⁷ This count of route segments may be low due to under-reporting or mis-specification. Under reporting occurred in some cases where ferry operators, who serviced a complex array of route segments, provided a preprinted schedule in lieu of completing the census form. Mis-specification may have occurred due to the route segments being more precisely defined in the 2010 NCFO than in years past.

Table 7: Route Segments by Census Region, 2009

Census region	Segments	Percent
Northeast	123	26.7
Midwest	72	15.6
South	121	26.3
West	131	28.4
U.S. territory	13	2.8
Non-U.S.	1	0.2
Total	461	100.0

These 461 individual route segments served a combined total of 7,787 nautical miles⁸ with an average distance of 18.6 nautical miles per route segment. By far the greatest number of route miles served were in the West region (4,887 nautical miles), with the longest of these route segments being 1,480 miles long. The next greatest number of route miles served was in the Northeast (1,113 nautical miles), followed by the Midwest and the South (794 and 663 nautical miles, respectively – table 8).

The majority of all route segments, regardless of region, were intrastate (84.2 percent); meaning that both terminals were located in the same state. There were significantly more interstate segments in the Northeast and Midwest (24.8 percent and 21.4 percent, respectively) than there were in any other region (table 9). There were 15 international segments between U.S. territories or non-U.S. ports to U.S. ports. A relatively small number of the route segments served a national park (10.1 percent).

⁸ 1 nautical mile = 1.15078 statute miles (i.e., highway miles).

Table 8: Ferry Route Miles by Census Region, 2009

Census region	Mean	Median	Minimum	Maximum	Total
Northeast	9.9	6.5	0.1	60.0	1,112.6
Midwest	13.0	1.8	0.1	75.0	793.9
South	6.0	1.0	0.0	120.0	662.5
West	41.4	10.4	0.1	1,480.9	4,886.9
U.S. territory	12.2	9.5	1.0	32.0	134.5
Non-U.S.	32.8	21.0	0.8	130.0	196.8
Total	18.6	4.0	0.0	1,480.0	7,787.2

Table 9: Segment Type and National Park Service by Census Region, 2009

Census region	Intrastate		Interstate ¹		International		Park service	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Northeast	90	74.4	30	24.8	1	0.8	15	15.6
Midwest	53	75.7	15	21.4	2	2.9	6	10.3
South	113	93.4	8	6.6	0	0.0	11	10.6
West	122	94.6	4	3.1	3	2.3	5	4.8
U.S. territory	9	69.2	0	0.0	4	30.8	1	7.7
Non-U.S.	1	14.3	1	14.3	5	71.4	0	0.0
Total	388	84.2	58	12.6	15	3.3	38	10.1

¹ Interstate Segments are assigned to the state of departure.

Methodology

The 2010 NCFO was a census of all known ferry boat operations within the United States and its territories, encompassing the 50 States, Puerto Rico, the U.S. Virgin Islands, and the Commonwealth of the Northern Mariana Islands. In addition to ferry operations providing domestic service within the United States and its territories, operations providing services to or from at least one U.S. terminal were also included. Ferry operations included within the scope of the NCFO were those providing itinerant, fixed route, and common carrier passenger and/or vehicle ferry service. Railroad car float operations are also included within the scope of the NCFO.

Not included within the scope of the ferry census were operations that were exclusively nonitinerant such as excursion services (e.g., whale watches, casino boats, day cruises, dinner cruises, etc.), passenger-only water taxi services not operating on a fixed route, LoLo (Lift-on/Lift-off) freight/auto carrier services, and/or long-distance passenger-only cruise ship services. Efforts to enumerate ferry operations within the United States for the 2010 census resulted in a frame of 243 active ferry operations for calendar year 2009.

All known ferry operations were encouraged to participate in the NCFO. The Bureau of Transportation Statistics sent an initial mailing in December 2010 to each operator inviting them to take part in the NCFO. This mailing included a paper questionnaire and a cover letter that contained a web link to an online version of the questionnaire. A second mailing was sent out in January 2011. This mailing simply included the link to the web questionnaire. A third and final mailing was sent in April 2011 that included a second copy of the paper questionnaire.

Nonrespondents were then contacted by phone during the months of June and July 2011 to ensure that they received their questionnaire and to determine if they needed any assistance in completing the form. These phone calls were then followed up with actions specific to the operator to gain cooperation. In many cases the data were verified/collected over the phone. In others cases updated contact information and additional survey materials were mailed to the operator. All completed NCFO questionnaires were entered into the database using the online data collection tool. The data collection tool featured built-in editing rules to ensure responses contained the correct range and format as defined in the data schema.

Additional clarification of data entries and data cleaning was conducted based on information gathered from the ferry operator websites, as well as the U.S. Army Corps of Engineers and U.S. Coast Guard vessel databases. Census questionnaires were sent to 269 ferry operators. Of those, 15 were determined to be out of scope (i.e., they either did not qualify or they were no longer in operation). Of the remaining 254 operators who provided ferry service in 2009, a total of 231 ferry operators returned the NCFO

questionnaire for a response rate of 91 percent. Response rates were calculated using a simple ratio of the number of completed questionnaires over the number of active operators.

A number of operators either: 1) did not provide passenger and/or vehicle boarding data; or 2) asked that the data they did provide be kept confidential. Passenger and vehicle boarding estimates were developed using publicly available NCFO data, whereby missing values were estimated using a multiple imputation process. The imputation model for these estimates utilized the passenger and vehicle capacities to predict the missing values. The estimates in the tables represent the average of these imputed totals across all sets of imputations. The corresponding standard errors represent the statistical level of uncertainty associated with each statistic.

Even with these passenger imputations, it is expected that the passenger counts may be slightly under estimated due to car ferries that simply count vehicle boardings and not the passengers inside. There were a number of car ferries that did not report any passenger boardings even though there had to be at least one driver onboard. Finally, great caution should be taken when comparing NCFO statistics from census to census year due to differences in reporting and methodology. Data collection methods may fluctuate from census to census due to updated data collection requirements. Differences in nonresponse from census to census may also give rise to differences in reported statistics. Thus, census to census year comparisons are not encouraged.

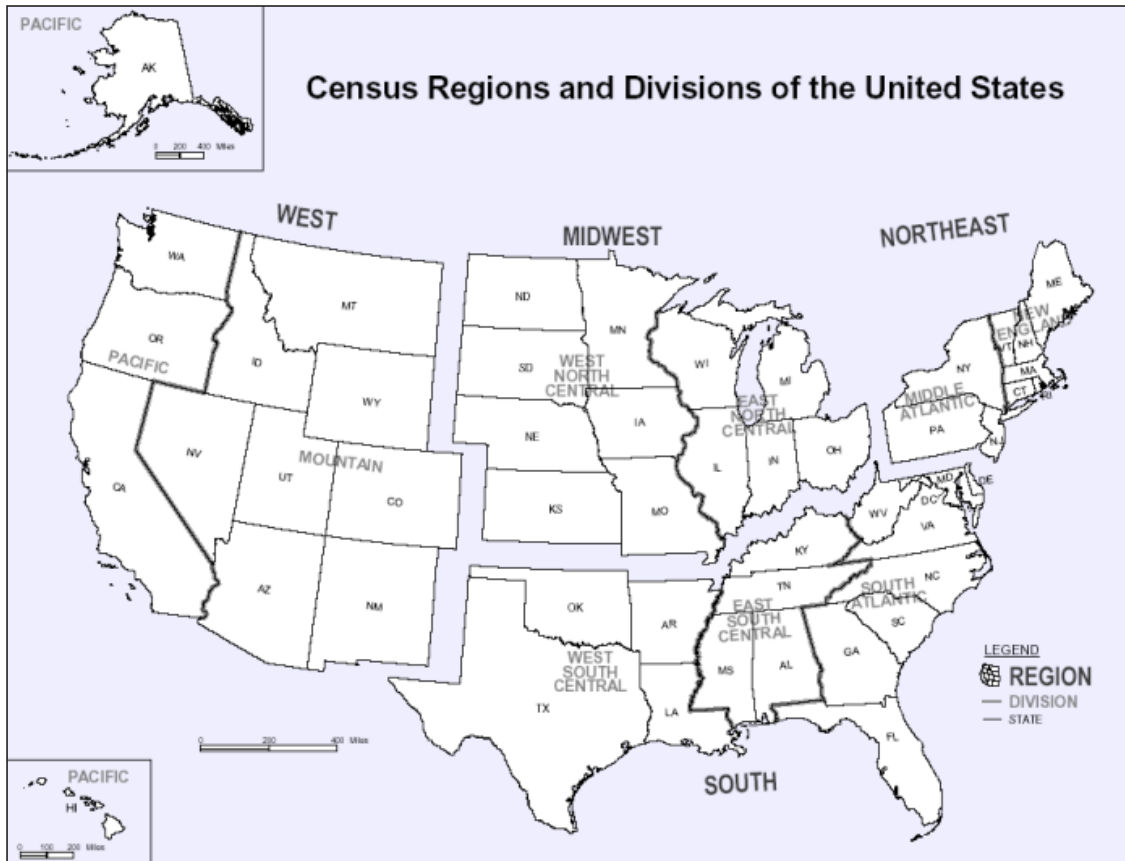
Appendix A - Passengers, Vehicles, and Route Miles by State, 2009

State	Passengers*		Vehicles*		Route miles
	Mean	Standard error	Mean	Standard error	Nautical
AL	760,941	100,997	217,403	25,203	4.6
AK	7,966,617	252,278	4,289,878	222,485	3,221.4
AR	346,746	81,993	16,292	0	0.8
CA	11,002,656	287,892	496,552	23,080	574.0
CT	1,922,207	73,582	864,734	40,883	81.6
DE	1,249,930	62,329	476,407	18,623	17.2
FL	1,959,079	102,210	108,821	17,740	352.9
GA	918,596	57,616	0	0	40.0
HI	153,350	0	0	0	34.0
IL	1,671,400	84,828	700,077	74,493	17.3
IA	15,258	0	0	0	2.3
KY	1,155,784	99,235	485,113	36,330	3.2
LA	7,013,117	149,787	4,596,278	40,925	18.1
ME	2,127,052	72,189	200,547	0	337.0
MD	2,010,518	151,650	282,997	34,069	48.4
MA	3,565,005	72,424	3,002,913	158,579	295.5
MI	3,960,891	154,195	2,148,903	22,367	667.3
MO	791,042	115,114	348,223	47,518	3.1
MT	0	0	2,100	0	0.3
NH	2,500	0	0	0	6.0
NJ	6,017,339	0	148,933	0	81.9
NY	11,582,268	274,903	2,597,905	103,022	259.7
NC	2,017,789	163,873	367,412	42,361	54.1
OH	2,977,595	185,120	490,353	54,642	41.9
OR	1,372,526	160,088	463,594	0	2.0
PA	203,263	0	55,154	0	3.2
RI	326,839	0	162,595	17,141	39.0
SC	1,372,229	113,105	32	0	22.0
TN	59,480	0	69,539	0	1.0
TX	2,848,197	0	1,181,426	0	5.9
UT	45,104	0	20,604	0	7.0
VT	882,162	86,457	432,526	36,084	94.3
VA	4,561,189	148,754	1,976,175	74,508	9.8
WA	15,446,241	175,891	9,998,709	46,599	1,200.2
WI	1,969,570	159,782	768,173	35,795	85.9
U.S. territory	2,508,658	154,501	123,985	32,075	134.5
Non-U.S.	39,404	0	0	0	20.0
Total	102,822,543	1,052,154	37,094,351	412,011	7,787.2

* Estimates were developed from multiple imputations computed at the operator segment level based on the passenger and vehicle capacities. The mean and standard error of these estimates were then computed for the total boardings and then aggregated by state.

Appendix B – State Groupings by Census Region *

Throughout this report, data tables are displayed by census regions (i.e., Pacific, Northeast, South, Midwest, and West). Figure 1 shows how the states are grouped within these regions. For data displayed at the state level, please refer to appendices A and B .



* SOURCE: http://www.census.gov/geo/maps-data/maps/pdfs/reference/us_regdiv.pdf.

Appendix C – Operator, Fleet, and Terminal Characteristics, 2009

Operation Characteristics (sample size)	Private		Public		Both	
	Count	Percent	Count	Percent	Count	Percent
Ownership (212)	130	61.3	71	33.5	11	5.2
Operation (212)	135	63.7	64	30.2	13	6.1

	Yes	Percent	No	Percent
Fares regulated (208)	113	54.3	95	45.7

Fleet

Characteristics (sample size)	Count	Percent
Carry passengers (647)	604	93.4
Carry vehicles (645)	281	43.6
Carry freight (641)	142	22.2
Self-propelled (548)	526	96.0
Other propulsion (548)	22	4.0
Diesel (630)	573	91.0
Gas (630)	24	3.8
CNG (630)	1	0.2
Electric (630)	2	0.3
Other (630)	30	4.8

Terminal

Characteristics (sample size)	Count	Percent
Parking (467)	318	68.1
Local bus (467)	154	33.0
Inter-city bus (467)	73	15.6
Local rail (467)	34	7.3
Inter-city rail (467)	25	5.4

Appendix D - Operators, Vessels, Terminals, and Route Segments by State, 2009*

State	Operators	Vessels	Terminals	Route segments
AL	3	5	7	4
AK	10	23	30	30
AR	1	4	1	1
CA	16	62	41	49
CT	5	17	10	8
DE	1	2	4	4
FL	11	16	15	13
GA	4	9	10	11
HI	1	4	2	2
IL	5	29	15	15
IA	-	-	2	2
KY	7	9	11	9
LA	8	24	27	26
ME	10	28	32	25
MD	10	6	6	7
MA	13	52	20	22
MI	15	32	27	26
MN	1	2	1	-
MO	4	6	9	6
MT	1	2	4	2
MS	2	1	-	-
NH	2	1	2	1
NJ	5	44	14	14
NY	15	56	44	43
NC	13	44	20	19
OH	5	15	9	14
OR	2	3	7	5
PA	2	3	5	5
RI	4	8	6	3
SC	5	11	8	10
TN	2	4	4	2
TX	4	8	6	4
UT	1	2	2	2
VT	2	13	3	2
VA	7	12	15	11
WA	13	46	37	41
WI	7	14	10	9
WV	1	0	-	-
U.S. territory	10	29	12	13
Non-U.S.	3	6	7	1
Total	231	652	485	461

* Missing values were excluded from counts and not imputed. Routes segments were defined as the direct travel from one port to another.